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TREATMENT OF MARINERS SUFFERING FROM URETHRITIS BEFORE ATTENDANCE AT A VD CLINIC*

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Disquiet has been expressed in the past at the treatment of patients suffering from venereal diseases by non-specialists (British Medical Association/British Cooperative Clinical Group, 1959). Mariners, however, are at greater risk than the general population with regard to non-specialist treatment, because of the readily available drugs in the ship's medical stores for use when at sea, and the fact that treatment is given by ship's officers or stewards. This form of treatment by laymen is outside the National Health Service and is not recognized by the Venereal Diseases Act of 1917.

The "Ship Captain's Medical Guide" (Ministry of Transport, 1952) lays down recommendations for the management of illnesses on British ships. It states that the treatment of gonorrhoea should consist of only one injection of penicillin of half the "normal dose" (*i.e.* 1 ml. instead of 2 ml.) and that it must not be repeated (page 153).

Under "Venereal Diseases" (page 289) is detailed the treatment of gonorrhoea:

> "Spread a small quantity of the discharge with a clean match on one of the glass microscope slides provided and burn the match at once. When this has dried it should be sealed in an envelope, dated and marked with the patient's initials, and taken by him for examination by the Specialist when he visits the Clinic at the next port of call. It is essential to have the diagnosis confirmed in this way as discharges from the penis are not invariably due to gonorrhoea. Having confirmed that the man has, in fact, a discharge from the pipe following a recent risk of infection, and having made a smear of it as described above, treatment of the condition should be given forthwith.
>
> "1. A single injection of half the normal dose of penicillin, i.e. 1 ml. instead of 2 ml., is given into the muscle of the buttock. This injection must on no account be repeated because of the danger of temporarily driving underground a developing syphilitic infection and postponing the recognition and proper treatment of this more serious disease. If the discharge persists for more than 3 or 4 days after this treatment, this probably is not due to gonorrhoea and a course of sulphadimidine tablets should be given as described below.
>
> "2. As an alternative to the use of penicillin by injections, a course of sulphadimidine tablets can be given. The course recommended is an initial dose of 6 tablets followed by 3 tablets taken morning, noon, and night, after food, for 4 days running, making 39 tablets in all."

On page 290 we read:

> "Finally there is the rare case where the drug is shown to have been ineffective by the persistence of the discharge 7 days after completion of the course of tablets. In such cases the course may be repeated, though repetition is rarely of any use and unless at some distance away from a port it would be better to await the arrival in port, where the man can go ashore for treatment at a venereal diseases clinic.
>
> "Note 1. Although all signs of the disease may have disappeared, any man who has been treated for gonorrhoea must, at the first opportunity, visit a venereal diseases clinic ashore. He must take the slide with him to have the diagnosis confirmed and he will be properly tested for cure. Also tests will be made to make sure that he did not catch syphilis also."

Page 292:

> "Important Note. In all cases of gonorrhoea or of chancroid the patient must report immediately to the first available venereal diseases clinic for examination and further tests. This is vital, not only in the man's own interests but in that of his wife and children and all others concerned."

This survey aims to investigate the incidence, amount, and effect of treatment given before attendance at a clinic, to determine how far the recommendations are being carried out, whether the penicillin dosage recommended is adequate, and whether further recommendations are needed to ensure that all those so treated get proper diagnosis

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and surveillance, not only on British ships but on those of other nations, as recommended by the Thirteenth World Health Assembly (WHO, 1960). Finally, it is proposed to see whether such treatment causes an appreciable deficit in the present statistics of male gonorrhoea as reported by sea-port clinics.

Methods

From January 1, 1960, to December 31, 1962, a special inquiry was made in the histories of mariners attending the venereal diseases clinics at Tynemouth and South Shields to ascertain whether any treatment had been given on board ship or in port, between the last risk of infection and attendance at the clinic, and, if so, the type and quantity and, furthermore, whether there was a history of such treatment in the past. In the case of those giving a history of urethral discharge treated on board ship, inquiry was made whether slides had been taken before treatment.

Results

In the 3 years, 638 seamen attended the clinics, 209 with conditions other than urethritis or transferred from other venereal diseases clinics; 429 had urethritis, either gonococcal or non-gonococcal, or had some complaint such as dysuria, frequency of micturition, or slight mucoid urethral discharge requiring symptomatic treatment, or had no complaints but came for reassurance that they were free from infection. 107 (25 per cent.) of these 429 patients admitted having received treatment since their last risk, 84 (19·6 per cent.) on board ship and 23 (5·4 per cent.) ashore when it had been ordered by medical practitioners, not all local; 21 (4·9 per cent.) stated that they had received similar treatment in the past, as did five (2·4 per cent.) of the 209.

Table I records the numbers treated before attendance at a clinic each year. It will be seen that, while there was a fall in the numbers treated by medical practitioners over the years, there was a greater increase in the numbers treated on board ship.

Table II shows the type of treatment given to the patients. Initially only penicillin or the sulphonamides were given, but from 1961 onwards a few mariners who attended for reassurance claimed to have been treated with tablets or capsules of the tetracycline group, or with injections of streptomycin given on board ship or on shore. For the purpose of this investigation, the former treatment has been grouped with penicillin, and the latter with the sulphonamides, because this grouping keeps the anti-syphilitic drugs together. From this it will be seen that 94 (87·8 per cent.) received anti-syphilitic drugs, the average amount given being about four injections of penicillin or treatment for four days with tetracyclines.

TABLE I

TREATMENT OF PATIENTS ON BOARD SHIP OR BY MEDICAL PRACTITIONERS, 1960–62

Year		1960		1961		1962		Total	
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
Total Number of Patients		105		144		180		429	
Treatment	On Board Ship	17	16·2	29	20	38	21·1	84	19·6
	Medical Practitioners	11	10·5	7	5	5	2·8	23	5·4
	Total	28	26·7	36	25	43	23·9	107	25

TABLE II

TREATMENT GIVEN ON BOARD SHIP OR BY MEDICAL PRACTITIONERS

Treatment	Sulphonamide/ Streptomycin	Penicillin/ Tetracycline	Combined	Total
On Board Ship	10	59	15	84
Medical Practitioners	3	17	3	23
Total	13 (12·2 per cent.)	76 (71 per cent.)	18 (16·8 per cent.)	107

Table III compares the amount of penicillin/tetracycline treatment with the diagnosis on admission to the clinic.

TABLE III

AMOUNT OF PENICILLIN/TETRACYCLINE GIVEN COMPARED WITH DIAGNOSIS ON ARRIVAL AT CLINIC

Diagnosis	No. of Injections of Penicillin or Days of Treatment with Tetracyclines														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Gonococcal Urethritis	6*	2*	5	2*	—	—	—	—	—	1*	—	—	—	—	16
Non-gonococcal Urethritis	0	5*	4***	2*	2*	2	—	—	—	—	—	1	—	1*	17
Mild Urethritis	4	4	4	2	2	1	—	1	—	—	—	—	—	—	18
Need of Reassurance	10*	7**	7	5**	7**	4	1	—	—	—	—	—	—	2	43
Totals	20	18	20	11	11	7	1	1	0	1	0	1	0	3	94

* Also received Sulphonamide/Streptomycin treatment.

The dosage of penicillin is unknown, but the eight patients attending with gonorrhoea who had had only one or two injections all responded to one injection of 1,200,000 units "Penidural A.P.", while those who had received more responded to oxytetracycline 250 mg 6-hrly for 3 days, as did all those with non-gonococcal urethritis.

A slide, taken on board ship before treatment, was brought in three cases; one was broken and could not be examined, the other two showed that the men concerned had had non-gonococcal urethritis (only one responding to the penicillin injections given). All the other patients said that slides had not been taken.

Of the 94 seamen treated, 43 (46 per cent.) were cured of their urethritis, 35 (37 per cent.) were left with some urethritis and sixteen (17 per cent.) with gonorrhoea.

Table IV compares the amount of sulphonamide/streptomycin treatment with the diagnosis on admission. Of the six patients with gonorrhoea, four were subsequently cured with penicillin, but two, who are included among those mentioned already under penicillin failures, were cured with tetracyclines, and this antibiotic was given to all those with non-gonococcal urethritis. It is of interest to note that no patient who had received sulphonamide/streptomycin treatment presented at the clinic with mild urinary complaints; they either had frank urethritis or were without complaint. The majority (18) of these patients received combined treatment, but despite this only fifteen were cured and ten were left with non-gonococcal urethritis, while six remained with gonorrhoea.

TABLE IV

AMOUNT OF SULPHONAMIDE/STREPTOMYCIN GIVEN COMPARED WITH DIAGNOSIS ON ARRIVAL AT CLINIC

Diagnosis	No. of Days of Treatment with Sulphonamides or Injections of Streptomycin							
	1	2	3	4	5	6	7	Total
Gonococcal Urethritis	5 (4)	—	1	—	—	—	—	6
Non-gonococcal Urethritis	4 (2)	1 (1)	—	2 (1)	—	—	3 (2)	10
Mild Urethritis	—	—	—	—	—	—	—	0
Need of Reassurance	6 (3)	4 (1)	—	1 (1)	3 (2)	—	1 (1)	15
Totals	15	5	1	3	3	0	4	31

Note: Those who also received Penicillin/Tetracycline are given in parentheses.

Study of the place of birth of the 429 mariners showed that two-thirds (287) were British by birth and altogether over 80 per cent. (346) were serving in the British Mercantile Marine. In all, patients of thirty nationalities attended, but penicillin/tetracycline treatment had been given to patients of only fifteen of these nationalities and sulphonamides alone to patients of a further three; prior treatment of any nature was denied by all the patients from the remaining twelve nations. The incidence of the various diagnoses in these nationality groups is set out in Table V.

Despite a higher incidence of treatment of urethritis before attending the clinic, by patients of the fourteen other nations as compared with British patients (29·5 compared with 26·3 per cent.) and of penicillin/tetracycline treatment (26·7 compared with 23·7 per cent.), only one-third of them were "cured" as compared with about one-half of the British.

Despite close questioning it was not possible, in the vast majority of cases, to ascertain the dosage of penicillin, or the type used, especially on foreign

TABLE V

DIAGNOSIS AND NATIONALITY ACCORDING TO TYPE OF PRIOR TREATMENT

Treatment	National Group	Gonorrhoea	Non-gonococcal Urethritis	Mild Urethritis	Need of Reassurance	Totals
Antibiotics ..	Great Britain	(8) 74 II	(11) 53 II	(14) 35	(33) 116 III	(66) 278 VII
	Other Fourteen Nations*	(8) 42	(6) 21 I	(4) 10	(10) 32 II	(28) 105 III
	Total	(16) 116 II	(17) 74 III	(18) 45	(43) 148 V	(94) 383 X
Sulphonamides/ Streptomycin	Three Nations† ..	9	2 I	2	7 II	20 III
No Treatment	Twelve Nations‡ ..	12	3	2	9	26
Total		(16) 137 II	(17) 79 IV	(18) 49	(43) 164 VII	(94) 429 XIII

* Aden, West Indies, Ceylon, Eire, India, Pakistan, South Africa (Bantu), and Somalia (under British Mercantile Marine), Denmark Finland, Germany, Greece, Poland, Portugal.

† One patient each from Latvia, Norway, Nigeria.

‡ China, East Africa, Hong Kong, Iraq, Malaya, and Malta (under British Mercantile Marine), Estonia, Netherlands, North Africa, Spain, Sweden, and Venezuela.

Note: Figures in parentheses indicate those treated with penicillin/tetracyclines, and Roman figures those treated with sulphonamide/streptomycin alone.

ships: it was not uncommon for British ships to carry foreign penicillin prescribed by the shipping companies' doctors abroad.

That the antibiotics had cured some gonorrhoea can be seen by comparing the incidence of gonococcal urethritis among patients of the "15 nations" with that of the rest (*i.e.* the three who only had sulphonamides/streptomycin and the twelve who denied any pre-treatment); Table VI shows that there is some significance in the low incidence of gonorrhoea among the mariners of the fifteen nationalities for which antibiotics were used.

TABLE VI

INCIDENCE OF GONOCOCCAL URETHRITIS AMONG PATIENTS OF NATIONS USING ANTIBIOTICS, COMPARED WITH THE REST

National Group	Number of Patients	Gonococcal Urethritis	
		No.	Per cent.
Fifteen Nations using Antibiotics	383	116	30·3
Other Fifteen Nations..	46	21	45·7
Totals	429	137	31·9

$n = 1$; $\chi^2 = 3{\cdot}77$; $0{\cdot}1 < P < 0{\cdot}05$.

So much for the treatment given to some men and its effect on urethritis; it is of equal importance to know why some men were treated and others not. Table VII shows the interval between exposure to risk and attendance at the clinic, and gives the diagnosis on attendance, noting those who had already received treatment. While over half the patients (221) had attended within 3 weeks of risk of infection (including 111 (81 per cent.) of those with gonorrhoea), 67 (15·6 per cent.) did not do so until 3 months after exposure to risk. No patient attending within 4 days of risk of infection had received prior treatment, but about half of those who attended for reassurance, and who had been so treated, had run risks 3 or more months before attendance. Nevertheless, there was no markedly greater interval between risk of infection and attendance among those treated compared with those untreated; in fact, it was shorter in those attending with mild urethritis or for reassurance (Table VIII).

TABLE VIII

AVERAGE INTERVAL BETWEEN RISK OF INFECTION AND ATTENDANCE AT CLINIC, BY DIAGNOSIS AND PRIOR TREATMENT

Diagnosis	Treated	Untreated
Gonococcal Urethritis	16·5 days	14 days
Non-gonococcal Urethritis	9 wks	7·5 wks
Mild Urethritis	7 wks	12 wks
Need of Reassurance	10·5 wks	13·5 wks
Totals	7 wks	8 wks

From these figures it does not appear that the men who were treated were necessarily those who were further from the venereal diseases clinic, especially as most of the ships were on voyages between Great Britain, the Continent, and Scandinavian ports; in fact, in the two groups with frank urethritis, prior treatment was associated with a longer interval, possibly because the symptoms were masked or depressed.

As duration of time between risk and attendance at the clinic did not appear to have been a factor in deciding which mariners were treated and which not, consideration was next given to the ages of the patients.

Table IX (opposite) sets out the ages by diagnosis and by whether or not the patients had been treated.

TABLE VII

INTERVAL BETWEEN RISK OF INFECTION AND ATTENDANCE AT CLINIC OF TREATED AND UNTREATED SEAMEN

Diagnosis		Interval between Risk and Attendance														Totals
		Days				Weeks						Months				
		<4	4–7	8–10	11–14	2–3	3–4	4–5	5–6	6–8	9–13	4	5 and 6	7–12	12+	
Gonococcal Urethritis	Untreated ..	7	39	24	14	12	13	1	3	0	5	1	0	0	0	119
	Treated ..	0	3	2	7	3	1	0	1	0	1	0	0	0	0	18
Non-gonococcal Urethritis	Untreated ..	2	13	5	7	9	6	2	1	1	4	1	2	2	3	58
	Treated ..	0	2	0	0	0	4	2	3	0	9	0	0	0	1	21
Mild Urethritis	Untreated ..	1	8	2	3	3	3	1	0	0	2	1	0	4	3	31
	Treated ..	0	0	0	1	4	2	1	0	2	7	1	0	0	0	18
Need of Reassurance	Untreated ..	4	6	5	11	17	10	9	3	6	9	8	5	5	16	114
	Treated ..	0	1	1	1	4	5	3	5	7	9	5	4	2	3	50
Total		14	72	39	44	52	44	19	16	16	46	17	11	13	26	429
		169				193						67				

TABLE IX
AGE AND DIAGNOSIS

Diagnosis		Age Group (yrs)										Totals
		16–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60+	
Gonococcal Urethritis	Untreated	20	34	23	14	12	8	5	2	1	0	119
	Treated	4	6	7	1	0	0	0	0	0	0	18
Non-gonococcal Urethritis	Untreated	6	27	10	0	8	3	1	2	0	1	58
	Treated	5	9	2	0	3	2	0	0	0	0	21
Mild Urethritis	Untreated	4	12	5	1	1	5	2	0	1	0	31
	Treated	4	4	5	4	1	0	0	0	0	0	18
Need of Reassurance	Untreated	23	33	22	11	14	6	2	2	0	1	114
	Treated	10	22	5	5	4	3	0	1	0	0	50
Totals		76	147	79	36	43	27	10	7	2	2	429

It will be seen that, irrespective of diagnosis, it is the younger patients who were more likely to get prior treatment, especially with penicillin. That the incidence of treatment before attendance at a clinic falls steadily with increasing age is shown in Table X. There is a comparatively high proportion of males aged 16–24 years in this series.

TABLE X
PATIENTS TREATED BEFORE ATTENDANCE AT CLINIC, BY AGE GROUP

Age Group (yrs)	No. of Patients	Prior Treatment	
		No.	Per cent.
16–24	223	64	28·7
25–34	115	29	25·2
35–44	70	13	18·6
45–54	17	1	6·1
Over 54	4	0	0
Total	429	107	25

It will be noticed that the incidence of gonorrhoea for England and Wales (British Cooperative Clinical Group, 1960, 1962, 1963) is fairly static, and compares with that of the Manchester Region (Laird, 1962a), which is higher than that of the City of Manchester (Laird, 1962b): these figures are not as high as those from seaports, such as Liverpool (Prebble, 1962) and Göteborg (Gisslén, Hellgren and Starck, 1961), or those from Tyneside in the present series (Table XI).

As it had been shown that the younger, and therefore probably less experienced seamen, were more likely to be treated before attendance, the past history of the patients was investigated to find out whether and where they had been treated. This information is set out in Table XII (overleaf), which does not take into account the number of times any one patient was treated by shipmates or medical practitioners, or at venereal diseases clinics, one attendance only under each heading being recorded.

These figures show that the incidence of the

TABLE XI
INCIDENCE OF GONORRHOEA IN MALES AGED 14–19 AND 20–24, IN VARIOUS AREAS, 1957–62

Author	Date of Report	Area	Year	Percentage aged 14–19 yrs	Percentage aged 20–24 yrs
British Cooperative Clinical Group	(1959)	England and Wales	1957	5·5	27·2
British Cooperative Clinical Group	(1960)	England and Wales	1958	6·1	27·8
British Cooperative Clinical Group	(1962)	England and Wales	1960	6·4	30·1
British Cooperative Clinical Group	(1963)	England and Wales	1961	6·3	27·1
Laird	(1962b)	Manchester City	1961	3·8	27·5
Laird	(1962a)	Manchester Region	1961	5·6	28·6
Prebble	(1962)	Liverpool	1960	10·3	36·7 (20–25 yrs)
Gisslén and others	(1961)	Göteborg	1959	23	—
Present Series		Tyneside	1960–62	17·5 (16–19 yrs)	29·2

TABLE XII
PAST TREATMENT

Group	No. of Patients	Past Treatment			
		VD Clinic		On Board Ship	Medical Practitioner
Treated	107	20 (7*)	18·7 per cent.	3	0
				2·8 per cent.	
Untreated	322	127 (59*)	39·4 per cent.	12	6
				5·6 per cent.	
Totals	429	147 (66*)	34·3 per cent.	15	6
				4·9 per cent.	

* Figures in parentheses refer to previous attendance at same clinic as present episode.

"untreated", as far as this episode under consideration is concerned, was over double that of the treated, with regard to previous attendance at venereal diseases clinics as well as to treatment elsewhere; when previous attendance at the same clinic as for the present episode was considered, then it was seen that 18·3 per cent. of the "untreated" had so attended compared with only 6·5 per cent. of the treated.

The effect of the treatment of patients before attendance was investigated to see if it had any adverse effect on default. Surveillance is continued normally up to 13 weeks from risk of infection, and Table VIII shows that those treated before attendance needed, on average, 6 weeks to complete surveillance after presenting at the clinic, as compared with the 5 weeks needed by the untreated. Table XIII sets out the disposal from the clinic of treated and untreated.

These figures show that those patients who had already been treated were in no way inferior to the rest as far as completion of surveillance was concerned; in fact they did better in that, on average, they had an extra week of surveillance to complete compared with the others.

Discussion

The accuracy of the results depends of course upon the truthfulness of the histories given by the patients. While all reasonable care was taken in obtaining a history, patients were not pressed so far that they "lost face", unless it was thought that possibly some undisclosed contact was at special risk. It was considered that the incidence of treatment revealed by this survey was an underestimate, and that there were a number of patients, especially among those who had ostensibly come for reassurance, who had been "cured" of their urethritis elsewhere, most probably at sea.

There is a risk to any venereal diseases service that patients will attend other than recognized centres for treatment, either from fear of interrogation or from lack of confidence in the secrecy of attendance. During the 3-year period under survey, 23 (9 per cent.) of the 255 mariners attending with urethritis had been treated by medical practitioners, and this is comparable with 8·9 per cent. of cases of urethritis treated outside venereal diseases clinics at Southampton, also a seaport, in 1956 (British Medical Association/British Cooperative Clinical Group, 1959). The most probable reason for the decrease over the 3-year period in the amount of this treatment before attendance, is that in 1961 the number of clinic sessions was increased from four to nine half-days per week. No mariner was referred to the clinic by the practitioner who had treated him; they mostly came of their own accord or were sent by the Shipping Federation Medical Officers.

TABLE XIII
DISPOSAL FROM CLINIC OF TREATED AND UNTREATED PATIENTS

Group	No. of Patients	Disposal					
		Discharged		Transferred		Defaulted	
		No.	Per cent.	No.	Per cent.	No.	Per cent.
Treated	107	44	41·0	50	47·0	13	12·0
Untreated	322	121	37·6	140	43·5	61	18·9
Totals	429	165	38·5	190	44·3	74	17·2

Of greater importance than the treatment by medical practitioners is the treatment on board ship by laymen, which increased throughout the 3-year period. The population at risk is a young one, it is peripatetic, healthy, and promiscuous, and the incidence of gonorrhoea is higher than that among immigrants in inland towns. At seaports, mariners, both native and foreigner, act in the population like immigrants. There is no sudden rise and fall in the incidence of venereal disease coinciding with immigration, the trend follows the amount of shipping.

Why were some men treated and others not? It did not follow that the further the ship was from port the more likely a man was to be treated on board ship. This survey has shown that the most important factor in determining whether or not a man would be treated on board ship was his youth, and in mariners we are dealing with an especially young population.

Previous "episodes" in the past had a salutory effect in that, irrespective of whether treatment had been given in a clinic or elsewhere on that occasion, the patient was more likely this time to go directly to the clinic. Previous attendance at the same clinic was three times more common among the untreated than in those treated before attendance. The more experienced the mariner the more likely he was to attempt to get specialist treatment; the younger and less experienced were more likely to be offered and to accept prior treatment.

Of all the patients in this survey, 80·7 per cent. sailed in the British Mercantile Marine (as did 81·3 per cent. of those treated before attendance) and were therefore subject to the recommendations of the "Ship Captain's Medical Guide" (Ministry of Transport, 1952). Nevertheless, a single injection of penicillin, as recommended, was given to only twenty (21·3 per cent.) of the 94 patients treated with antibiotics having an antisyphilitic action. That the dosage of penicillin, even when multiple injections (average 4) were given, is inadequate can be seen from the fact that fifteen (21 per cent.) of those who admitted having had four injections or less were still suffering from gonorrhoea on admission to the clinic.

The 1 ml. dosage of penicillin recommended in the "Ship Captain's Medical Guide" is equivalent to between 200,000 and 300,000 units crystalline sodium or potassium salts or procaine penicillin G., but it is now generally accepted that a much higher dosage is needed (Reyn, 1961; Laird, 1963; Morton, 1963).

Certain cases of gonorrhoea in Tyneside have failed to respond to penicillin. The diagnosis has been confirmed by culture and fermentation tests, and repeated cultures taken after treatment failure have confirmed the persistence of gonococci which were sensitive *in vitro* to penicillin. Blood specimens have shown a low penicillin blood level in these patients, who were all young and active, and one wonders whether the studies of penicillin blood levels published by the manufacturers were carried out on bedfast patients who, because of their immobility retained a penicillin depot within the muscle, whereas active young men doing fairly heavy manual work may disperse the intramuscular depot more rapidly into the blood and lymph streams, resulting in rapid excretion.

The "Ship Captain's Medical Guide" is not the only authority which has advised on the treatment of venereal disease on board ship, for the Thirteenth World Health Assembly (WHO, 1960) passed a resolution recommending a general medical handbook which should embody explanations why a urethral smear should be made before giving penicillin for suspected gonorrhoea. The recommendations appear largely to be ignored; not only are slides not taken but multiple injections of unrecorded dose are given and there is no surveillance for syphilis.

All medical care on British ships is outside the Health Service; it is paid for by the shipowners, and ships' medical stores are replenished, by contracting dispensing chemists, as they are used up. Schedules of equipment and drugs are laid down in the "Ship Captain's Medical Guide", scales varying according to tonnage, except for fishing vessels which have separate scales. Expense could be saved to shipowners if the drugs and equipment used in the treatment of venereal diseases on board ship could be replenished, free of charge, by the venereal diseases clinic at the next port of call in exchange, in the case of urethritis, for the slide taken at the time of treatment. The amount of treatment could be entered on the envelope, together with the date and patient's initials as already recommended. This service would be of only limited value if confined to the United Kingdom, but would be of the greatest benefit if all maritime nations collaborated. It needs no further legislation as it could be ordered under Article 2 of the Brussels Agreement of 1924, responsibility for the application of which was taken over by the World Health Organisation in 1946 ("World Directory of Venereal Diseases Treatment Centres at Ports", WHO, 1961).

If ships' stewards were trained to the standard of medical technicians, as recommended by the World Health Organization, then "personal books" could be sent to them and they could ensure that the mariners continued treatment as ordered at the venereal diseases clinic and that they attended for surveillance. It is necessary to recruit someone on

board ship to help the international control of the transmission of venereal diseases. At present there is a complete void between ports and this is just as wide between the ports of one country as internationally. Medical care in the Armed Forces and in civilian practice has come to rely more and more on technicians, who are trained to a high standard. In this respect the Mercantile Marine has fallen far behind, not merely in the management of venereal diseases, important though that is, but also in the whole field of therapeutics.

The recommendations of the "Ship Captain's Medical Guide" aim to ensure that the diagnosis of urethritis, treated on board ship, is later confirmed by a venereal diseases clinic where surveillance can be established. Even if the former aim is not being achieved the latter aim is having some success, in that 41 per cent. of those admitting to prior treatment completed surveillance as compared with 37·6 per cent. of those who denied it. An economic factor in cutting down default in 1962 was the shipping depression, many mariners not being able to get a ship out of the Tyne before they had completed their surveillance.

Of the 107 who admitted treatment before attendance, eighteen still had gonorrhoea on visiting the clinic. Of the 89 others a certain proportion must have been cured of gonorrhoea, especially those fifty who attended for reassurance alone, and most probably also the eighteen with "mild urethritis" (which diagnosis covered mucoid urethral discharge, dysuria, and anxiety deemed worthy of symptomatic treatment). This figure of 68 is about half that of those found with gonorrhoea (137), but it is probable that a number of those who denied having had prior treatment, had in fact been cured before coming to the clinic, especially those who attended only for reassurance. 203 of those who denied having had treatment did not have gonorrhoea on attending the clinic, and if one-third of them had been cured of gonorrhoea this would add approximately a further 68, so that the estimated total of gonorrhoea in mariners would be double the present reported one. During the 3-year period under survey the total incidence of male gonorrhoea reported to the Ministry of Health from the two clinics was 269, and the additional 128 is almost half of this, so we have possibly been under-reporting the incidence of male gonorrhoea by one-third. Whatever is true for these two clinics also holds good for the other seaport clinics to a greater or lesser extent, so that the sum total of the estimated deficiency must be quite large.

This treatment of mariners on board ship with no check on diagnosis or surveillance is yet another gap, and numerically a very important one, in the statistics of gonorrhoea, in addition to those listed by King and Nicol (1961).

Mariners play an important part in the importation of venereal diseases into a country, and at the present time when ships' crews may be transported by air from one continent to another, it is not uncommon to diagnose urethritis acquired half the globe away during the previous week. Study of the maritime aspects of venereal diseases in Denmark indicated that the true amount of gonorrhoea (and syphilis) was perhaps three or four times that recorded by port health statistics (Public Health Notes, 1962), and Härö and Pätiälä (1961) estimated that 50 per cent. of gonorrhoea among Finnish seamen was acquired abroad.

Summary and Conclusions

During the 3-year period, January 1, 1960 to December 31, 1962, 638 mariners attended the venereal diseases clinics at Tynemouth and South Shields. 429 had urethritis or attended for reassurance alone. 107 (25 per cent.) admitted having been treated before attendance, and 94 (87·8 per cent. of them) had received penicillin or tetracyclines, with sulphonamides or streptomycin in addition in some cases.

The average number of penicillin injections received was four, and the average course of sulphonamides lasted for 2½ days; eighteen (16·8 per cent.) still had gonorrhoea when they attended the clinic.

78·5 per cent. of the treatment before attendance at a clinic was given at sea; during the 3-year period the amount of prior treatment rose, being greater than the drop in the numbers treated by medical practitioners in ports. Irrespective of where the treatment had been given, less than one patient in eight had received sulphonamides or streptomycin alone.

There was no significant difference between the untreated and the treated in the interval between exposure to risk of infection and attendance at the clinic, the average being 8 weeks for the former and 7 weeks for the latter.

The incidence of gonorrhoea among young mariners was very high, 17·5 per cent. of the patients being under 20 years of age. This is the incidence in other sea-ports and higher than that in inland clinics. The reasons for this are discussed.

Age played a definite part in determining whether or not a mariner was treated before attendance. The younger he was the more likely he was to have been treated; 23 (28·9 per cent.) of 76 teenagers had been treated and 22 had received penicillin. If there was a history of previous venereal disease, whether treated in a clinic or not, the patients were more likely to

wait to attend a clinic; 39·4 per cent. of the untreated gave a history of previous veneral disease as compared with 18·7 per cent. of those treated before attendance, and 18·3 per cent. of the former had attended the same clinic in the past compared with 6·5 per cent. of the latter.

Treatment before attendance at a clinic did not encourage default, 44 (41 per cent.) of the 107 treated mariners completed an average of 6 weeks surveillance compared with 121 (37·6 per cent.) of the 322 mariners who denied having had treatment, who completed an average of 5 weeks' surveillance. The reasons for this are discussed.

The recommendations for the management of urethritis laid down in the "Ship Captain's Medical Guide" and by the World Health Organization are discussed. The dosage of penicillin recommended by the former is low by present-day standards. The instructions given are not receiving proper attention as evidenced by the facts that only three slides were brought to the clinic for diagnosis and that multiple penicillin injections were given. Suggestions are made for training stewards to the standard of medical technicians and for the replenishment of penicillin supplies free of charge by the clinic receiving the slide for diagnosis, thus attempting to ensure that, after proper treatment, all patients will attend a venereal diseases clinic at the earliest opportunity to confirm the diagnosis and to start surveillance for syphilis.

There was a lower incidence of gonorrhoea than expected in the mariners of fifteen nationalities who admitted having had treatment with antibiotics before attendance (30·3 as compared with 45·7 per cent.). This points to others having had similar, but undisclosed, treatment. It is probable that as many mariners again as those who attended with gonorrhoea had been cured before attending. At present, mariners account for half the male cases of gonorrhoea seen at these sea-port clinics. This state of affairs, which is the same at other sea-port clinics in the United Kingdom, causes a serious gap in treatment control and contact-tracing as well as in the statistics received by the Ministry of Health.

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Traitement donné aux marins atteints d'urétrite avant de se présenter à une clinique antivénérienne

RÉSUMÉ

Pendant les 3 ans (du 1 janvier 1960 au 31 décembre 1962) 638 marins se présentèrent au cliniques antivénériennes de Tynemouth et de South Shields au nord-est de l'Angleterre. 429 étaient atteints d'urétrite ou n'avaient besoin que de rassurance. 107 avaient déjà été traités, et 94 (87,8%) d'entre eux avaient reçu de la pénicilline ou des tétracyclines avec des sulfonamides ou de la streptomycine en plus.

En moyenne, le nombre d'injections de pénicilline fut de quatre, et les traitement par les sulfonamides dura 2 jours et demi; 18 (16,8%) souffraient encore de la gonorrhée quand ils se présentaient à la clinique.

La plupart (75%) des traitements reçus avant la visite avait été donnés en mer, et pendant les 3 ans de l'étude cette proportion augmenta, tandis que celle traitée par les vénéréologues des ports diminua. Indépendamment du lieu du traitement préalable, moins d'un cas sur huit avait reçu des sulfonamides ou de la streptomycine seule.

Il n'y avait pas de différence significative entre les sujets traités et non-traités en ce qui concerne l'intervalle entre l'exposition au risque d'infection et la première consultation en clinique—intervalle de 8 semaines pour les uns et de 7 semaines pour les autres.

Il y avait plusieurs cas de blennorragie parmi les jeunes marins, 17,5% ayant moins de 20 ans. Ce chiffre correspond aux données des autres ports. Ce pourcentage est plus grand qu'aux cliniques de l'intérieur du pays. On en discute la raison.

L'âge du marin était important. Ce fut les plus jeunes qui se firent traiter le plus souvent; 23 (28,9%) sur 76 âgés de moins de 20 ans avaient été traités, et 22 avaient reçu de la penicilline. Ceux qui avaient été atteints auparavant (traités à la clinique ou non) vinrent plus souvent directement à la clinique; 39,4% de sujets non traités avaient été atteints auparavant contre 18,7% des sujets traités; 18,3% des premiers et 6,5% des derniers revinrent à la même clinique.

Le traitement préliminaire n'encouragea pas le manque d'assiduité aux consultations; on surveilla 44 (41 %) des 107 marins traités pendant 6 semaines et 121 (37,6%) des marins non-traités pendant 5 semaines. On en discute la raison.

L'auteur passe en revue l'avis sur l'urétrite donné par le "Ship Captain's Medical Guide" et par l'O.M.S. La dose de pénicilline recommandée par celui-là est faible par rapport aux doses préconisées à l'heure actuelle.

Les instructions données ne sont pas suivies: seulement trois lames diagnostiques furent apportées à la clinique et les injections multiples de pénicilline furent données dans plusieurs cas. Peut-être que si les cambusiers recevaient la formation des techniciens médicaux et si toute clinique recevant une lame diagnostique pouvait remplacer la pénicilline gratuitement, les malades seraient traités en mer correctement et se présenteraient à la clinique pour confirmation du diagnostic et surveillance des cas soupçonnés d'avoir la syphilis.

L'incidence de la gonorrhée était plus faible que l'on ne s'y attendait chez les marins de 15 pays qui avaient reçu des antibiotiques avant de venir à la clinique (30,3 contre 45,7%), ce qui indique que d'autres avaient été traités aussi mais ne l'avouèrent pas. Il se peut qu'autant de marins que ceux qui se présentèrent atteints de gonorrhée aient été guéris avant de venir à la clinique.

Les marins forment à présent la moitié des mâles atteints de gonorrhée dans les cliniques du littoral étudiées ici, comme dans celles des autres ports du Royaume-Uni; ceci cause une brèche sérieuse dans le contrôle des maladies vénériennes, empêche le dépistage des contacts, et falsifie les statistiques du Bureau de Santé Publique.